Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-28. Cancelled.

29. (new) A method of promoting one or more of regeneration of secondary dentin or formation of reparative dentin or osteodentin in a mammal, the method comprising administering to exposed vital dental pulp tissue of said mammal an active enamel substance in an amount sufficient to promote one or more of regeneration of secondary dentin or formation of reparative dentin or osteodentin.

30. (new) The method of claim 29, wherein the step of administering the active enamel substance comprises causing the active enamel substance to contact the mammal's vital dental pulp tissue.

31. (new) The method according to claim 29, wherein said vital dental pulp tissue is comprised in erupted teeth.

32. (new) The method according to claim 29, wherein the mammal is human.

33. (new) The method according to claim 32, wherein the human is older than about 12 years old.

34. (new) The method of claim 29, further comprising the step of applying a filling material to said mammal following a dental procedure involving exposure of the mammal's vital dental pulp tissue.

35. (new) The method according to claim 29, wherein the active enamel substance is of porcine origin.

36. (new) The method according to claim 29, wherein the active enamel substance is of synthetic origin.

37. (new) The method according to claim 29, wherein the active enamel substance is an enamel matrix, an enamel matrix derivative, or an enamel matrix protein.

38. (new) The method according to claim 29, wherein the active enamel substance is selected from the group including one or more of the following: enamelins, amelogenins, non-amelogenins, proline-rich non-amelogenins, amelins, ameloblastin, sheathlin, tuftelins, dentinsialoprotein, dentinsialophosphoprotein, and derivatives thereof.

39. (new) The method according to claim 29, wherein the active enamel substance comprises at least two substances selected from the group consisting of amelogenins, proline-rich non-amelogenins, enamelins, amelins, ameloblastin, sheathlin, tuftelins, tuft proteins, serum proteins, salivary proteins, dentinsialoprotein, and dentinsialophosphoprotein, and derivatives thereof.

40. (new) The method according to claim 29, wherein the active enamel substance comprises amelogenins.

41. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of at most about 60 kDa to at most about 120 kDa, as determined by SDS electrophoresis.

42. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of at most about 100 kDa, as determined by SDS electrophoresis.

43. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of at most about 90 kDa, as determined by SDS electrophoresis.

44. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of at most about 80 kDa, as determined by SDS electrophoresis.

45. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of at most about 70 kDa, as determined by SDS electrophoresis.

46. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of at most about 60 kDa, as determined by SDS electrophoresis.

47. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight below about 60 kDa, as determined by SDS electrophoresis.

48. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight up to about 40 kDa, as determined by SDS electrophoresis.

49. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight between 5 kDa and 25 kDa, as determined by SDS electrophoresis.

50. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of about 25 kDa, as determined by SDS electrophoresis.

51. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of about 20 kDa, as determined by SDS electrophoresis

52. (new) The method according to claim 29, wherein the active enamel substance has a molecular weight of about 5 kDa, as determined by SDS electrophoresis.

53. (new) The method according to claim 29, wherein the active enamel substance comprises a mixture of active enamel substances having different molecular weights.

54. (new) The method according to claim 29, wherein the active enamel substance includes one or more of amelogenin, amelin, tuftelin and

dentinsialoprotein having a molecular weight below about 60 kDa, as determined by SDS electrophoresis.

55. (new) The method according to claim 29, wherein the active enamel substance comprises an amino acid sequence comprising a consecutive string of 20 amino acids at least 80% identical with a string of amino acids of the same length obtained from a polypeptide comprising SEQ ID NO. 1, amino acids 1-103 of SEQ ID NO. 1 or amino acids 6-324 of SEQ ID NO. 2.

56. (new) The method according to claim 29, wherein at least a part of the active enamel substance is in the form of aggregates or after application *in vivo* is capable of forming aggregates.

57. (new) The method according to claim 56, wherein the aggregates have a particle size from about 5 kDa to about 40 kDa, as determined by SDS electrophoresis.

58. (new) The method according to claim 56, wherein the aggregates have a particle size from about 20 nm to about 1 μm.

59. (new) The method according to claim 29, wherein a pharmaceutical composition comprising the active enamel substance is administered to the mammal.

60. (new) The method according to claim 59, wherein the pharmaceutical composition comprises a pharmaceutically acceptable excipient.

61. (new) The method according to claim 60, wherein the pharmaceutically acceptable excipient is propylene glycol alginate.

62. (new) The method according to claim 59, wherein the pharmaceutical composition comprises about 30 mg/ml active enamel substance in propylene glycol alginate.

63. (new) The method according to claim 29, wherein the amount of active enamel substance applied to the mammal's vital dental pulp tissue is an amount of total protein per mm^2 of dental pulp tissue corresponding to from 0.005 mg/mm^2 to 5.0 mg/mm^2.

64. (new) The method according to claim 63, wherein the amount of active enamel substance applied to the mammal's vital dental pulp tissue is an amount of total protein per mm^2 of dental pulp tissue corresponding to from 0.01 mg/mm^2 to 3.0 mg/mm^2.

65. (new) The method according to claim 29, wherein the active enamel substance is applied at a concentration between 0.01 mg/ml to 40 mg/ml.

66. (new) The method according to claim 29, wherein the active enamel substance is applied at a concentration between 0.1 mg/ml to 30 mg/ml.

67. (new) The method according to claim 29, wherein the active enamel substance has a protein content from about 0.05% w/w to 100% w/w.